INSTITUTE OF PUBLIC HEALTH

COLLEGE OF MEDICINE AND HEALTH SCIENCES

UNIVERSITY OF GONDAR

Dietary diversity, meal frequency and associated factors among infant and young children aged 6-23 months in Dangila, Northwest Ethiopia, 2014.

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Assessment of minimum dietary diversity, meal frequency practices and associated factors among infant and young children aged 6-23 months in Dangila town Northwest Ethiopia, 2014.

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Acronyms

ANC-Antenatal Care

AOR-Adjusted Odd Ratio

ARI- Acute Respiratory Infection

BCC-Behavioral Change and Communication

CI- Confidence Interval

COR- Crude Odd Ratio

DHS-Demographic and Health Survey

EDHS-Ethiopian Demographic and Health Survey

IEC- Information, Education and Communication

IYCF- Infant and Young Child Feeding

MDD-Minimum Dietary Diversity

MDG –Millennium Development Goals

MMF-Minimum Meal Frequency

PNC- Postnatal Care

SD- Standard Deviation

SPSS-Statistical Package for Social Science

WHO – World Health Organization

24 h- Twenty Four Hour

Abstract

Back ground: Inappropriate feeding increases the risk of under nutrition, illness and mortality of children less than 2 years of age. Only 10.8% and 44.7% of children 6 -23 months got minimum dietary diversity and minimum meal frequency respectively in Ethiopia.

Objective: To assess minimum dietary diversity, meal frequency practices and associated factors among infant and young children aged 6-23 months in Dangila.

Methods: Community based cross sectional study was conducted from March to April in Dangila. A total of 925 children aged 6-23 months were included. Simple random sampling technique was used.Interviewer administered questionnaire were uesd. Bivariate and multivariable logistic regression analyses was employed to identify factors associated with minimum dietary diversity and meal frequency.

Results: A total of 920 children 06-23 months were included, with 99.5%response rate. Proportion of children who met the minimum dietary diversity and meal frequency was 12.6% and 50.4% respectively. Mothers education AOR 2.516; 95%CI (1.284, 4.929)]. Age of a child [AOR2.047;95%CI(1.172,3.575)],Birth order [AOR2.077;95%CI(1.235,3.494)],Urban area [AOR2.094;95%CI(1.117,3.926)], Home gardening[AOR2.031;95%CI(1.093,3.775)],and Media exposure [AOR2.738; 95%CI (1.517,4.943)] has significant association with minimum dietary diversity.

Child age [AOR3.025;95%CI (2.141,4.274)], Birth order of child [AOR1.580;95%CI (1.133,2.205)], Mother involve in decision making [AOR1.512;95%CI(1.053,2.170)], Media exposure [AOR2.620;95%CI(1.901,3.611)] and Postnatal visit [AOR2.295; 95%CI (1.269,4.150)] has significant association with meal frequency.

Conclusion and recommendation: children received minimum dietary diversity and meal frequency is low. Being Young age, first birth order and lack of media exposure affect both dietary diversity and meal frequency. Lack of education, live in rural area and lack of home gardening affect dietary diversity. Mother involvement in decision making and postnatal visit was protective for meal frequency. To increase dietary diversity and meal frequency increasing mother's education, home gardening, mass media promotion and mother involvement in decision making are essential.

Key words: MDD, MMF, infant and young child, Dangila.

1. Introduction

1.1. Statement of the problem

Complementary feeding practice is defined as the process of starting other foods in addition to breast milk to babies. when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, other foods and liquids are needed along with breast milk[1] . The target age range for complementary feeding is from 6 to 24 months of age, even if breastfeeding continue beyond two years [2, 3]. According to world health organization(WHO) infant and young child feeding (IYCF) practice indicators of Complimentary feeding includes starting of solid, semi-solid or soft foods, Minimum meal frequency, Minimum dietary diversity, Minimum acceptable diet and Consumption of iron-rich or iron-fortified foods[4].

The first two years of life are a critical period since rates of malnutrition usually peak at this time with consequences persist throughout life. This period is also important for optimal growth, health, and development. During this period children become vulnerable to growth retardation and Growth faltering begins early in infancy. The “window of opportunity” for improving nutrition is also this first 1000 days from pregnancy through the first 2 years of life. The damage to physical growth and brain development that occurs during this period is extensive and irreversible. The deficits acquired during this time are difficult if not impossible to compensate for later in childhood. Malnutrition starts when children transition from breast milk to cereal or starch based complementary foods[5].

Complementary feeding practice is a significant factor that determines the nutritional status of children, hence Inappropriate complementary feeding practices increases the risk of under nutrition, illness and mortality in infants and young children less than 2 years of age [6].Main consequence of in adequate complimentary feeding practice is Malnutrition. This malnutrition itself has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children below five years. greater than two-third of these deaths, which are associated with inappropriate feeding practices during the first two year of life especially feeding begin with foods nutritionally inadequate, less diversified and infrequently [7]. Malnourished children who survive also are more frequently sick and suffer the life-long consequences of

reduced capacity for physical work, impaired intellectual performance, if women were malnourished at childhood, their reproductive capacity is affected, their infants have lower birth weight, and they may have more complicated labor and deliveries, which results many children in a population are malnourished, it has also implications for national development [6, 7].

In Ethiopia, children less than five years are 44% stunted, 10% are wasted and 29% are underweight which reflects the effects of both acute and chronic under nutrition. Only 4% have feed using minimum acceptable diet [8].

A study done on analysis of EDHS 2011 showed that 10.8% and 44.7% of children aged 6 -23 months were received minimum dietary diversity and minimum meal frequency respectively[9].

Hence the prevalence of malnutrition is still high among the children in Ethiopia and associated with low complementary feeding practices (dietary diversity and meal frequency), it is imperative that further research is essential to find out actual feeding practices and factors associated with dietary diversity and meal frequency among Infant and young children.

1.2. Literature review

1.2.1. Practices of minimum dietary diversity and meal frequency

Practice of minimum dietary diversity studies conducted in different parts of the world including Ethiopia by analyzing demographic and health survey (DHS) data. proportion of children received dietary diversity in Burkina Faso 14%, Democratic Republic of Congo 12%, Mali16% [10], study done in India15.2% and Ethiopia10.8 %.[9, 11]. Studies in Asian and Latin American countries practice minimum dietary diversity as follow, proportion of children who received a minimum dietary diversity in Sri Lanka71%, Bangladesh 42%[12, 13], In Nepal two repots showed that children who received minimum dietary diversity is 34% in 2006 and 30% in 2011[14, 15].studies conducted in Kathmandu on complimentary feeding practice among caretakers of young children show those children who received the minimum dietary diversity is 72 %[16]. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi showed that children who received minimum dietary diversity is 33%[17].

Practice of minimum meal frequency studies also conducted in different parts of the world. Children who received minimum meal frequency are different from place to place. In Africa countries looks like Mali 25%, Burkina Faso31%, Malawi 49%[10].Children those received minimum meal frequency in Sri Lanka is 88%, in Bangladesh 81%, in India 41 % [11, 18]. Studies conducted in Nepal at different time show that children who received minimum meal frequency is 82% in 2006 and 77% in 2011[15, 19]). In Kathmandu also shows minimum meal frequency of children received 65 %[16]. Study conducted in east new Delhi also showed that children who received minimum meal frequency shows that 49 %[17]. in Ethiopia only one study shows 44.7 % of children received minimum meal frequency[9].

1.2.2. Factors associated with minimum dietary diversity and meal frequency practices

There are various factors significantly associated with children receiving minimum dietary diversity and meal frequency. Factors studied can be described as parents attribute, Child attribute, health service related factors, community and household related factors (see figure 1).

Factors associated with minimum dietary diversity practices

Parents related factors

Maternal education is reported to be significantly associated in most of studies reviewed. Study conducted in Sri Lanka, India, Nepal, Pakistan, Indonesia, Bangladesh, east Delhi showed proportion of children receiving minimum dietary diversity is higher among women who are better educated. Similarly, in Ethiopia a study among women with primary and secondary education are 43% and 30% more likely to practice adequate dietary diversity as compared those with no formal education[9, 11, 19, 20].

Maternal age has significant association in dietary diversity. Studies conducted in India, Kathmandu, Nepal, Sri Lanka showed that as age of mother increased proportion of children receiving minimum dietary diversity also increased.

A study done in Sri Lanka and Kathmandu on complementary feeding shows children mothers who have own occupation feed their children optimally as compared with those that have no occupation.

Paternal education is one of the factors that affect dietary diversity that children received. Study in Nepal, Indonesia, Seri Lanka and Bangladesh show that children born from educated father get a minimum dietary diversity as compared with none educated [12, 15, 18, 20].

Infant and young child related factors

Studies conducted in Nepal, Indonesia and Sri Lanka indicate as the age of child decreased the dietary diversity also decreased [11, 18, 20]. In Ethiopia, children aged 12–17 and 18–23 months are 67% and 78% times less likely to practice adequate dietary diversity compared to children aged 6–11 months[9].

Birth order is also found as important determinant for dietary diversity. Children who are born in the third order had nearly two times more risk to be feed inappropriately compared to children born first[9].

Health service related factors

Having pre-natal visit regarding the advantage of complimentary feeding is found to be associated with children receiving minimum dietary diversity in studies conducted from Nepal, south Asia, India and Sri Lanka [11, 14, 15, 18].

Place of delivery is also one of the factors which is found to have significant association with dietary diversity. In a study conducted in Indonesia health institution delivery is reported to be positively associated with children receiving minimum dietary diversity [20].

The effect of having postnatal visit is assessed by a study done in Sri Lanka and India. Missing of post-natal care(PNC) check-ups was associated to 25% more chance of having inappropriate dietary diversity as compared with those having a 2 days PNC visit[11, 12].

Household and community related factors

Most of the studies conducted in different parts of the world showed that household wealth has positive association with having diversified foods among children. In Ethiopia and in South Asia children born from richest households received minimum dietary diversity as compared poor one [9, 11, 14, 19, 20].

One of the factors which affect child dietary diversity is mother's exposure to media. Studies in India, Sri Lanka and Ethiopia indicate mother exposed to media at least once per week has good dietary diversity [9, 11, 18].

Study conducted in Indonesia living in urban area has a positive association with dietary diversity as compared with mothers who live in rural area[20].

Factors associated with minimum meal frequency practice.

Parents related factors

Maternal education is significantly associated with meal frequency practice. In study conducted in India, Nepal, Pakistan ,Indonesia ,Bangladesh, Sri Lanka and Ethiopia, proportion of children receiving minimum meal frequency is higher in children born from mothers who are well educated[9, 11-14, 19, 20].

Maternal age has significant association in feeding of their child frequently. Studies conducted in India, Nepal and Sri Lanka showed that as age of mother increased children receiving minimum meal frequency also increased([11, 14, 18].

One study showed that occupation of a mother has association with children who receive minimum meal frequency. A study done in Nepal on complementary feeding shows that children mother who has own occupation feeds optimally as compared with those having no occupation [14].

Paternal education is one of a factor that affects meal frequency. Study in Nepal shows that children born from educated father gain a minimum meal frequency as compared with non-educated one[14].

Infant and young child related factors

Age of a child is one of factor that attribute to meal frequency. Studies conducted in Nepal, Indonesia and Sri Lanka showed that as the age of child is increased the dietary diversity is also increased [14, 18, 20]. Studies conducted in Ethiopia also supports these [9].

Health service related factors

Having prenatal visit regarding the advantage of complimentary feeding is found to be associated with children receiving minimum meal frequency in studies conducted from India and Ethiopia[9, 11].

Household and community related factors

study conducted in Nepal and Sri Lanka shows when parents have high household wealth children feed more frequently [12, 14].

One of the factors which affect children receiving minimum meal frequency is mother's exposure to media. A study in India, Nepal and Ethiopia indicates mothers exposed to media at least once per week have good feeding frequency to their child [9, 11, 14].

one study conducted in India indicates if mothers involved in household decision making in the household children can received better meal frequency as compared those of mothers not participated[11].

1.3. Justification of the study

Most of the studies conducted in Ethiopia have focused on mainly the breastfeeding aspects and not on complimentary feeding especially the dietary diversity and meal frequency aspects, which are important in infant and young child feeding for malnutrition intervention.

In the past years efforts that have been put to increase the practices of dietary diversity and meal frequency in Ethiopia, by both governmental and Non-governmental stake holders, but the trend in the proportion of dietary diversity and meal frequency practices is not improving. So it is one of the main goals of national nutrition program to rise from 4% to 20 % of minimum acceptable diet score in 2015.

Since dietary diversity and meal frequency has big role in reducing malnutrition, which accounts nearly half of the death of children younger than five years it will be a challenge to achieve the Millennium Development Goal (MDG) target of reducing child mortality by 2/3 in 2015 without appropriate and adequate infant and young child feeding.

There is only one research done previously on this topic at national level by analyzing EDHS 2011 data.

This study also helps policy makers, programmers and health care workers to take appropriate scientifically sound interventions.

So conducting such studies widely across different regions of the country enable to see factors that cause low practices of minimum diet diversity and minimum meal frequency.

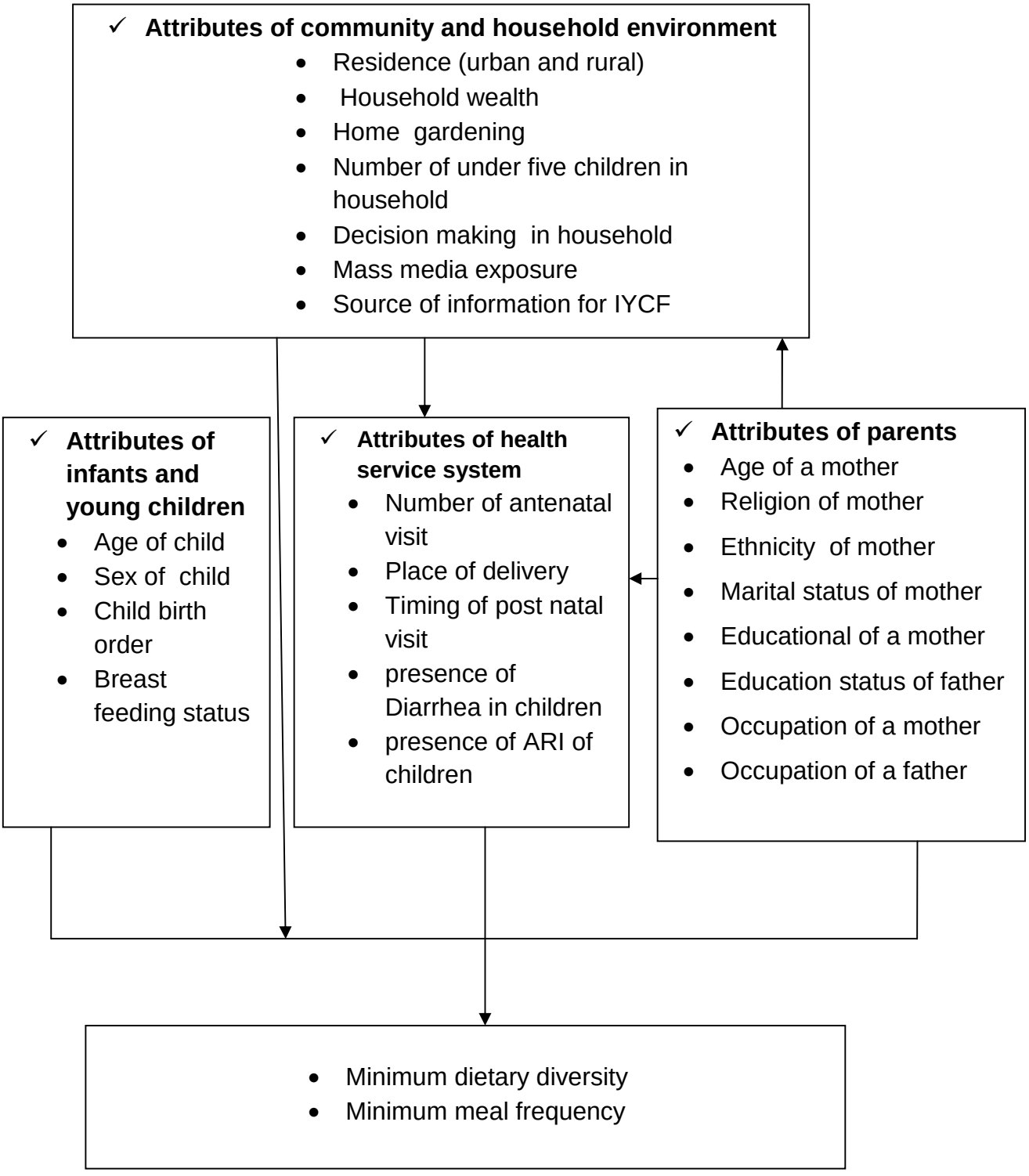


Fig.1: Conceptual framework for factors influencing dietary diversity and meal frequency feeding practices.

2. Objectives

2.1. General objective

- To assess minimum dietary diversity, meal frequency practices and associated factors among infant and young children aged 6-23 months in Dangila, Northwest Ethiopia, 2014.

2.2. Specific objectives

- To determine proportion of infant and young children age 6-23 months receiving minimum dietary diversity and minimum meal frequency practices score.
- To identify factors associated with dietary diversity and meal frequency practices among infant and young children aged 6–23 months.

3. Methods

3.1. Study design

A community based cross sectional study was conducted to assess the practice of minimum dietary diversity and meal frequency among infant and young children aged 6 to 23 months.

3.2. Study area and period

This study was conducted at Dangila from March 1-30, 2014 G.C. Dangila is located at a distance of 476 kilometers from the capital city Addis Ababa to northwest direction. The town is found in Amhara Awi zone. The administration town has 10 kebeles, with a total population of 36,810 among which 10,435 are mothers of reproductive age groups and 5236 are children less than five years of age among which 1847 are with age less than 24 months. It has one governmental health center and ten health posts. There are also five medium private clinics serving the community.

3.3. Source population

The source population was all infant and Young children 6-23 months who lived in Dangila Town.

3.4. Study population

The study population was those infant and young children residing in Dangila Town and included in the sample.

- **Inclusion criteria**: - all infant and young children 6 -23 months of age who lived in Dangila town for at least 6 months were included in the study.
- **Exclusion criteria**: - children's mother who were seriously ill and/or difficulty to communicate.

3.5. Sample size and sampling procedures

3.5.1. Sample size

By using single population proportion formula and taking the following assumptions the total sample size was calculated as follow:

- 95% confidence level.
- Practice of 10.8% for minimum dietary diversity and 44.7% for minimum meal frequency.
- Margin of error of 2% for minimum dietary diversity (rare event) and 5% for minimum meal frequency.
- Using single proportion formula; $n=z^2a/2\ P(1-P)/\ d^2$

Let: - n_1 for minimum diet diversity and n_2 for minimum meal frequency:-

$n_1= (1.96)^2*(0.108)*(1-0.108)/ (0.02)^2 = 925$

$n_2= (1.96)^2*(0.447)*(1-0.447)/ (0.05)^2 = 380$

By taking large sample size that n= 925, thus final sample size was 925.

3.5.2. Sampling technique and procedures

Lists of infant and young children age between 06 and 23 months with their mothers residing in all kebeles of Dangila Town were taken from health posts and sampling frame was constructed for each kebeles. Simple random sampling technique was used to select a sample of 925 children proportionally from all kebeles by using lottery method.

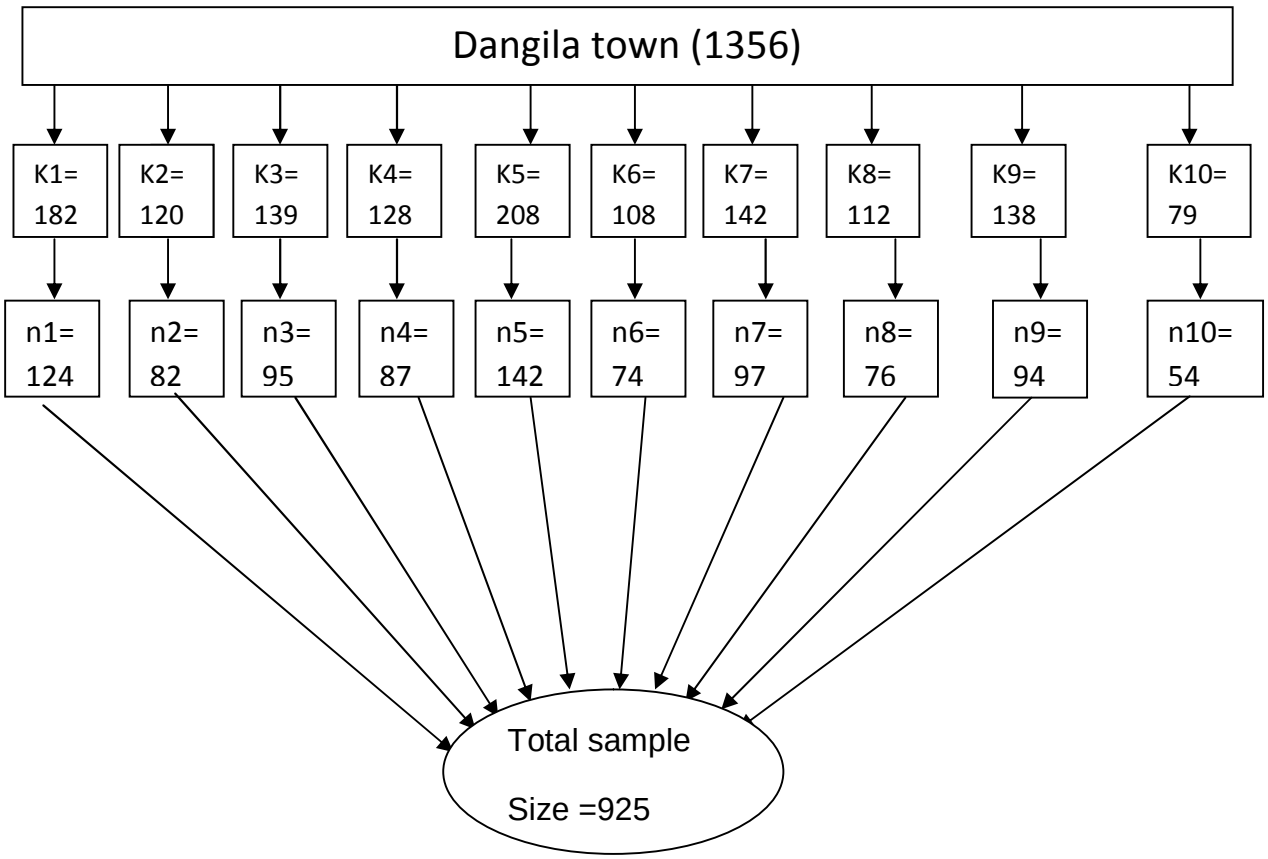


Figure2. Schematic presentation of sampling procedure.

3.6. Variables of the study

3.6.1. Dependent variables

- Minimum dietary diversity
- Minimum meal frequency

3.6.2. Independent variables

✓ **Attributes of parents**

- Age of a mother
- Religion of a mother
- Ethnicity of a mother
- Marital status of a mother
- Educational status of a mother
- Educational status of a father
- Occupation of a mother
- Occupation of a father

✓ **Infants and young children related attributes**

- Age of a child
- Sex of a child
- Birth order of index child
- Breast feeding status of a child
- Diarrhea status of a child in the last two weeks
- Acute respiratory infection(ARI) status of a child in the last two weeks

✓ **Health care serves related attributes**

- Number antenatal visit
- Place of delivery
- Timing of postnatal visit

✓ **Community and household attributes**

- Residence (urban and rural)
- Household Wealth
- Home gardening
- Number of under five children in the household
- Participation of mother in decision making at household
- Exposure to media
- Sources of information for IYCF

3.7. Operational definitions

1. Minimum Dietary Diversity: proportion of children with 6–23 months of age who received foods from four or more food groups of the seven food groups. The seven foods groups used for tabulation of this indicator were: grains, roots and tubers; legumes and nuts; dairy products (milk, yogurt); flesh foods (meat, fish, poultry and liver/organ meats); eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables. Consumption of any amount and quality of food from each food group was sufficient to 'count', i.e. there was no minimum quantity, except if an item was only used as a condiment. (WHO, 2008)

2. Minimum Meal Frequency: Proportion of breastfed and none breastfed children aged 6–23 months who received solid, semisolid, or soft foods (but also including milk feeds for non-breastfed children) the Minimum was defined as: twice for breastfed infants 6–8 months, three times for breastfed children 9–23 months and four times for non-breastfed children 6–23 months. (WHO, 2008).

3. Satisfactory Exposure to Media: Women aged 15–49 years at least once a week read a newspaper or magazine or listen to radio, or watched television.

3.8. Data collection procedures and quality management

Data of independent variables were collected using interviewer administered structured questionnaire which was adopted from EDHS 2011, which modified accordingly. Data on dietary diversity and meal frequency were collected by using interviewer administered structured questionnaire which was adopted from WHO standardized questionnaire for IYCF practices. This was based on the mother's recall of foods given to her child in the twenty four hours (24 h) before the survey.

Household Wealth was constructed using principal components analysis to determine the weights for the wealth based on information collected about several household assets and facilities. This wealth was divided into three categories as poor middle and rich and each household was assigned to one of these categories.

The questionnaire was prepared first in English language and then translated to Amharic it was translated back to English language. Ten data collectors (diploma nurse) and five supervisors (health officers) were participated in data collection process.

Data quality were insured by translating the questionnaire from English to Amharic then bake to English to see consistency using assistance from friends and colleagues fluent in both Amharic and English languages. Pre-testing of questionnaire was conducted on 30 children at Adiss Kidam Town which is a town near to Dangila Town. Training of data collectors and supervisors were conducted for two day to have consensus and same understanding of what is intended to be measured by each question in a questionnaire and how to approach participants ethically. The completeness, accuracy and consistency of the collected data were checked daily by supervisors and principal investigator.

3.9. Data processing and analysis

Data were entered and cleaned using EPI-info version 3.5.3 statistical software and then transferred to SPSS version 20.0, statistical software for further cleaning and analysis. Dietary diversity and meal frequency indicators were expressed as dichotomous variables with category 0 for not meeting the indicator criteria and category 1 for meeting the indicator criteria. Frequencies and cross tabulation were used to summarize descriptive statistics of the data and tables and graphs were used for data presentation. Bivariate logistic regression analysis was used to check variables association with dependent variables individually. Variables found to have association with the dependent variables (p- value up to 0.2) and significant variable in other related studies were then entered in to multivariate logistic regression models for further analysis and variables having p- value of less than 0.05 was considered as significantly associated with the dependent variables.

3.10. Ethical considerations

Ethical clearance was obtained from the ethical review board of institute of public health of university of Gondar. Dangila Town health office was informed prior to the initiation of the study with a letter of support from the University of Gondar. Letter of permission was obtained from Dangila Health Office and then to all Kebeles hierarchically.

Verbal consent was obtained from the participants mother after informing them all the purpose, benefit, risk, the confidentiality of the information and the voluntary nature of

participation in the study as it was stated in the information sheet annexed. Participants found to have mal practices regarding feeding were counseled after data were collected.

3.11. Dissemination of result

The findings of the study will be submitted to Institute of Public Health University of Gondar, Amhara Regional Health Bureau, and Dangila Town Administration Health office so that these bodies use the information to make scientifically justified decisions and interventions. Also the result will be presented to scientific conferences and published in journals.

4. Results

Characteristics of the sample

A total of 920 infant and young children aged 06 to 23 months with their mothers were enrolled in the study, with a response rate of 99.5%. The mean age of mothers were 29.09 ± 5.85 standard division (SD) with a range of 28 (17, 45). Most of them were Amhara (98.3%) by ethnicity and orthodox (82.4%) in religion. Majority of mothers in the sample were could not read and write (42.6%), and three fourth of them (75.5%) were not working outside their homes. regarding fothers occupation status,41.9% of fathers were farmers. for all parental characteristics see a table in next page(Table 1).

Table 2 presents the distribution of the sample according to attributes of the child, household, community and health care characteristics. Among the whole children, 338 (36.7%) were in the age group 6–11 months, 287 (31.2%) in 12–17months and the rest 295 (32.1%) found in 18–23 months. The mean age of children was 14.21 ± 5.27(SD) months, and 90 % of children were breast fed at a time of data collection.

More than three fourth of mothers (77.6%) were involved in decision making at household and 38.4% of mothers had satisfactory media exposure. The most source of information about IYCF practices was obtained from health professionals (76.4%). one third of study participants (33.2%) were found in the poor household wealth and only 10.3% had home gardening. This study also showed that more than half (56.6%) were from rural area. With regard to health care service provision to mothers, two thirds of the mothers (67.6%) had antenatal clinic (ANC) visits, and nearly one-third (32.1%) had no postnatal care (PNC) visits. One fourth of the infants (24.9%) were delivered at home (Table 2).

Table1: parental level characteristics of children aged 06-23 months, Dangila, Northwest Ethiopia, 2014. (n = 920)

Characteristic	frequency(n)	Percentage (%)
Parental characteristics		
Mother's age (years)		
15-24	223	24.2
25-34	512	55.7
35-49	185	20.1
Mother's religion		
Orthodox	758	82.4
Others*	162	17.6
Mother's ethnicity		
Amhara	904	98.3
Others**	16	1.7
Marital status		
Currently married	827	89.9
Formerly married/not***	93	10.1
Mother's education		
Cannot write and read	392	42.6
Primary education (1-8)	223	24.2
Secondary education(9-12)	219	23.9
Higher education****	86	9.3
Father's education (n=848)		
Cannot write and read	252	29.7
Primary education(1-8)	222	26.2
Secondary education.(9-12)	244	28.8
Higher education****	130	15.3
Mother's work		
Currently not work*****	695	75.5
Currently working	225	24.5
Father's work (n=848)		
Farmer	355	41.9
Merchant	149	17.6
Government employee	197	23.2
Non government employee	17	2
Self employee	74	8.7
Labor work	56	6.6

*****Muslim/protestant/catholic, **Oromo/Tigre, ***single/divorced/died, ****college/university, ***** housewife/student

Table 2: child, household, community and health care level characteristics of children aged 6–23 months, Dangila, Northwest Ethiopia, 2014.

Characteristics	Frequency (n)	Percentage (%)
Child characteristics		
Age of child in months		
06-11	338	36.7
12-17	287	31.2
18-23	295	32.1
Sex of a child		
Male	436	47.4
Female	484	52.6
Birth order of index child		
First	259	28.2
Second to fourth	553	60.1
Above fourth	108	11.7
Currently breast feed		
No	100	10.9
Yes	820	89.1
Diarrhea for the last two weeks		
No	798	86.7
Yes	122	13.3
ARI for the last two weeks		
No	814	88.5
Yes	106	11.5
Household characteristics		
No of <5 children		
One	622	67.6
Two	289	31.4
three and above	9	1
Decision making at household		
Mothers not involved	206	22.4
Mothers involved	714	77.6
Exposure to media		
Unsatisfactory	567	61.6
Satisfactory	353	38.4
Household Wealth		
Poor	305	33.2
Middle	314	34.1
Rich	301	32.7

Table 2: continued

Characteristics	Frequency (n)	Percentage (%)
Sources of information on IYCF*		
Health professionals	703	76.4
Relatives	133	14.5
Friends	149	16.2
Family	155	16.8
Media promotion(radio/television)	171	18.6
No information	82	8.9
Community characteristics		
Residence		
Rural	520	56.5
Urban	400	43.5
Home gardening		
No	825	89.7
Yes	95	10.3
Uses of home gardening (n=95)		
Only for sell	18	18.9
Only for household consumption	49	51.6
Both for cell and household	28	29.5
Health care characteristics		
Antenatal clinic visits		
Missing	142	15.4
1-3 times	156	17
Four and above times	622	67.6
Place of delivery		
Home	229	24.9
Institution	691	75.1
Timing of post-natal check-up		
Missing	295	32.1
Within 1-2 days	81	8.8
Within 3-6 days	161	17.5
After 7 days	383	41.6

*Proportion cannot be 100% (it is based on multiple option questions)

Types of food given to children

In table 3 below the seven food groups recommended by WHO and food given during the day preceding the interview is presented. Overall, children aged 6–23 months, grains, tubers and roots were provided to the greatest number of children (80.2%). Only few (2.4%) children were provided with flesh food (meat, organ meat and fish).

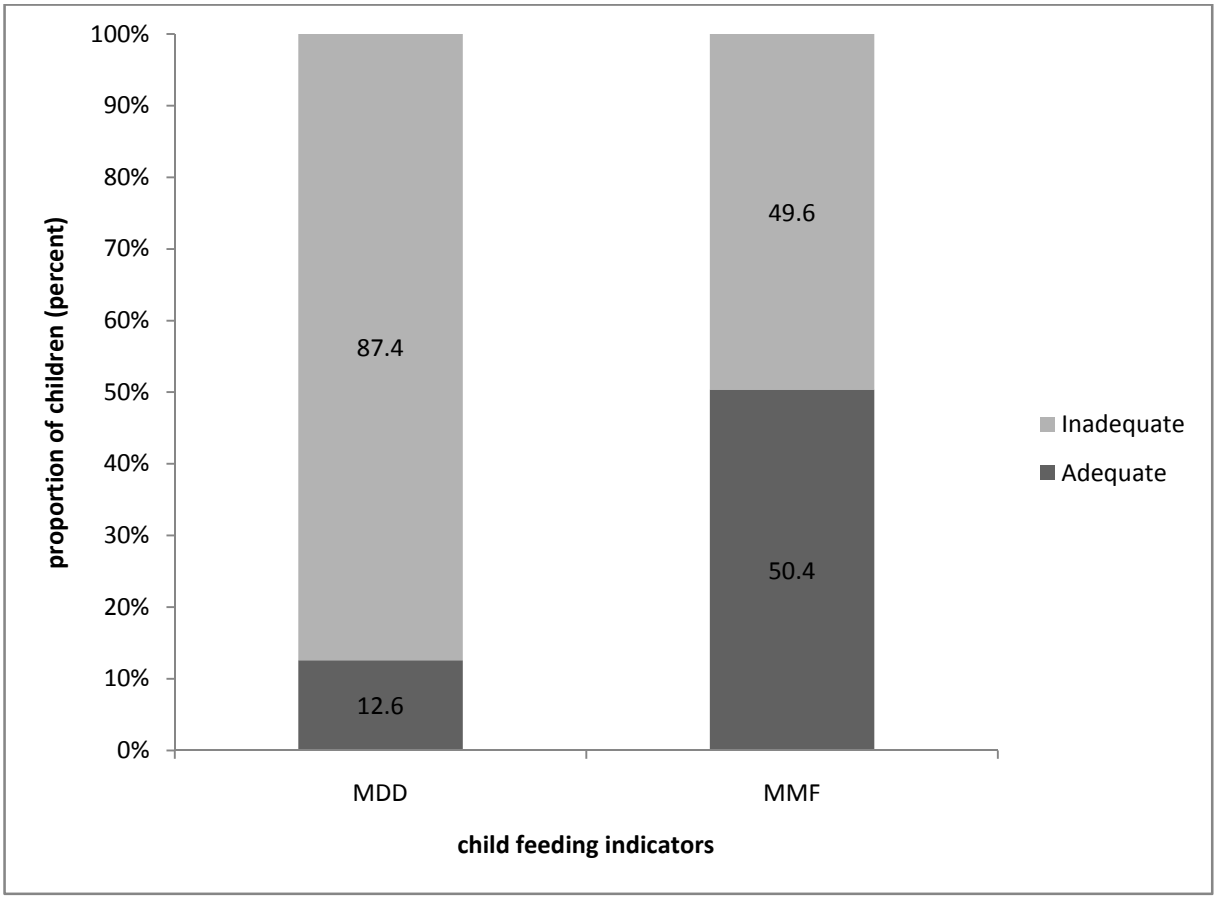
Table 3: Types of food groups practiced among 6–23 months children in Dangila, Northwest Ethiopia, 2014**.**

food groups	**frequency(n)**	***Percentage (%)**
1. Grains, roots and tubers	738	80.2
2. Legumes and nuts	544	59.1
3. Dairy products	452	49.1
4. Flesh food	22	2.4
5. Eggs	108	11.7
6. Vitamin A rich fruits and vegetables	131	14.2
7. Other fruits and vegetables	68	7.4

***** Proportion cannot be 100% (it is based on multiple option questions)

Practices of Dietary Diversity and Meal Frequency

Figure 3 below shows that the proportion of children who received the recommended minimum dietary diversity and meal frequency. Among children aged 6–23 months, only 12.6% of children were met the requirement for minimum dietary diversity and 50.4% met for minimum meal frequency requirement based on WHO indicator.



MDD=minimum dietary diversity MMF=minimum meal frequency

fig.3: proportion of children received recommended minimum dietary diversity and meal frequency practices among 06-23 months of children, Dangila, Northwest Ethiopia, 2014.

Factors Affecting Dietary Diversity and Meal Frequency

Factors associated with minimum diet diversity are shown in Table 4 below. The educational status of a mother, age of a child, birth order of index child, area of residence, home gardening and satisfactory media exposure of a mother were significantly associated with providing the minimum dietary diversity after controlling for other predictors in the model.

Children born from well-educated and had a secondary level education [AOR 2.516; 95% CI (1.284, 4.929)] or higher level education [AOR 4.230; 95% CI (1.918, 9.332)] were more likely to meet the minimum dietary diversity compared to children whose mothers did not have any formal education, indicating an increase in the odds of providing a diversity of foods with an increase in education level.

Age of a child in months was significantly associated with dietary diversity,Children aged 12–17 and 18–23 months were two and three times more likely to meet minimum dietary diversity compared to children aged 6–11 months[(AOR 2.047; 95% CI (1.172, 3.575) and (AOR 2.889; 95% CI (1.693, 4.931)]. respectively.

It was found that children born in the second to fourth order [AOR 2.077; 95% CI (1.235, 3.494)] and above fourth order [AOR 2.758; 95% CI (1.258, 6.046)] were more likely to be met the minimum dietary diversity compared with children who were born in first order.

Children born from the mothers live in urban area were more likely [AOR 2.094; 95% CI (1.117, 3.926)] to be provided with the minimum diversity food than children born from mothers live in rural area: similarly this study showed that children whose parents had a home gardening were two times [AOR 2.031; 95% CI (1.093,3.775)] more likely to meet the minimum dietary diversity compared to children whose parents did not have a home gardening, indicating an increase in the odds of providing a diversity of food with presence of home gardening.

The study also showed that children born from mothers who had satisfactory media exposure were more likely to get the recommended diversity of food [AOR 2.738; 95% CI (1.517, 4.943)] as compared to children born from mothers who did not have satisfactory media exposure.

Table 4: A bivariate and multivariate logistic regression output showing factors associated with minimum dietary diversity practice among 06 to 23 months children, Dangila town, Northwest Ethiopia, 2014.

	Minimum dietary diversity			
Characteristics	**Inadequate**	**Adequate**	**COR (95% CI)**	**AOR (95% CI)**
Mother's education				
Cannot write and read	359 (91.60)	33 (8.40)	1.00	1.00
Primary education(1-8)	199 (89.20)	24 (10.80)	1.312 (0.754,2.282)	1.539 (0.831,2.852)
secondary education(9-12)	182 (83.10)	37 (16.90)	2.212 (1.339,3.654)	**2.516 (1.284,4.929)**
Higher education	64 (74.40)	22 (25.60)	3.740 (2.049,6.824)	**4.230 (1.918,9.332)**
Mother's work				
Currently not working	616 (88.60)	79 (11.40)	1.00	1.00
Currently working	188 (83.60)	37 (16.40)	1.535 (1.005,2.343)	1.028 (0.618,1.712)
Age of a child(months)				
06-11	315 (93.20	23 (6.80)	1.00	1.00
12-17	248 (86.40)	39 (13.60)	2.154 (1.253,3.701)	**2.047 (1.172,3.575)**
18-23	241 (81.70)	54 (18.30)	3.069 (1.832,5.141)	**2.889 (1.693,4.931)**
Order of index child				
First	233 (90.00)	26 (10.00)	1.00	1.00
Second to fourth	479 (86.6)	74(13.4)	1.384 (0.862,2.223)	**2.077 (1.235,3.494)**
Above fourth	92 (85.20)	16 (14.80)	1.559 (0.799,3.039)	**2.758(1.258,6.046)**
ARI status				
No	706 (86.3)	108 (13.7)	1.00	1.00
Yes	98 (92.5)	8 (7.5)	0.534 (0.252,1.128)	0.571 (0.264,1.235)
Residence				
Rural	448 (86.20)	72 (13.80)	1.00	1.00
Urban	356 (89.00)	44 (21.00)	0.769 (0.515,1.147)	**2.094 (1.117,3.926)**
Home gardening				
No	728 (88.20)	97 (11.80)	1.00	1.00
Yes	76 (80.00)	19 (20.00)	1.876 (1.087,3.238)	**2.031 (1.093,3.775)**
Decision making at household				
Mothers not involved	190 (92.20)	16 (7.80)	1.00	1.00
Mothers involved	614 (86.00)	100(14.00)	1.934 (1.113,3.360)	0.913 (0.482,1.731)
Media exposure				
Unsatisfactory	521 (91.90)	46 (8.10)	1.00	1.00
Satisfactory	283 (80.20)	70 (19.80)	2.802 (1.879,4.176)	**2.738 (1.517,4.943)**

NB:- AOR: Adjusted Odd Ratio; COR: Crude Odd Ratio; CI: Confidence Interval;

Bolded AOR values: indicate significant association

Factors Affecting Minimum Meal Frequency practice

Table 5, in the next page presents the factors associated with providing the recommended minimum meal frequency. Age of a child, birth order of an index child, involvement of mother in decision making in the household, satisfactory media exposure of a mother and time of PNC visit were significantly associated with the recommended minimum meal frequency after controlling for other predictors in the model.

Children with age group of 12-17 months [AOR 3.025; 95% CI (2.141, 4.274)] and 18-23 months [AOR 5.028; 95% CI (3.524, 7.175)] were more likely to gain the recommended minimum number of feeds compared to children age group between 06-11months.

As the birth order of a child increased, children were more likely to be got the recommended meal frequency. Children in second to fourth order [AOR 1.580; 95% CI (1.133, 2.205)] and above fourth order [AOR 1.778; 95% CI (1.068-2.958)] were more likely to meet minimum meal frequency as compared first order of birth.

Children from mothers involved in decision making in the house hold [AOR 1.512; 95% CI (1.053, 2.170)] were more likely to provide the recommended meal frequency as compared to the children from the mothers not involved in decision making in the household.

Similarly Children whose mothers had satisfactory media exposure were more likely [AOR 2.620; 95% CI (1.901, 3.611)] to be provided with the recommended meal frequency as compared with those had no satisfactory media exposure.

Mothers who had attended PNC visit within 1-2 day after delivery [AOR 2.295; 95% CI (1.269, 4.150)] were more likely to provide recommended meal frequency than mothers who had no PNC visit.

Table 5: A bivariate and multivariate logistic regression output showing factors associated with minimum meal frequency practice in 06 to 23 months children, Dangila town, Northwest Ethiopia, 2014.

Characteristics	Minimum meal frequency Inadequate	Adequate	COR (95% CI)	AOR (95% CI)
Mother's education				
Cannot write and read	214 (54.60)	178 (45.40)	1.00	1.00
Primary education (1-8)	123 (55.20)	100 (44.80)	0.977 (0.702,1.36)	0.912 (0.612,1.359)
Secondary education(9 12)	85 (38.80)	134 (61.20)	1.895 (1.353,2.654)	1.347 (0.832,2.181)
Higher education	34 (39.50)	52 (60.50)	1.839 (1.143,2.959)	1.022 (0.531,1.966)
Mother's work				
Currently not work	358 (51.50)	337 (48.50)	1.00	1.00
Currently working	98 (43.6%)	127 (56.40)	1.377 (1.017,1.863)	1.180 (0.837,1.664)
Age of a child(months)				
06-11	237 (70.10)	101(29.90)	1.00	1.00
12-17	125 (43.60)	162 (56.40)	3.041 (2.187,4.229)	**3.025 (2.141,4.274)**
18-23	94(31.90)	201 (68.10)	5.018 (3.579,7.035)	**5.028 (3.524,7.175)**
Birth Order of index child				
First	135 (52.10)	124 (47.90)	1.00	1.00
Second to fourth	270 (48.80)	283 (51.20)	1.141 (0.849,1.533)	**1.580 (1.133,2.205)**
Above fourth	51(47.20)	57 (52.80)	1.217 (0.776,1.908)	**1.778 (1.068,2.958)**
Breast feeding status				
No	41 (41.00)	59 (59.00)	1.00	1.00
Yes	415 (50.60)	405 (49.40)	0.671(0.445,1034)	0.895 (0.550,1.454)
Decision making at household				
Mothers not involved	127 (61.70)	79 (38.30)	1.00	1.00
Mothers involved	329 (46.10)	385 (53.90)	1.881 (1.370,2.583)	**1.512 (1.053,2.170)**
Media exposure				
Unsatisfactory	335 (59.10)	232 (40.90)	1	1.00
Satisfactory	121 (34.30)	232 (65.70)	2.769 (2.100,3.65)	**2.620 (1.901,3.611)**
Residence				
Rural	240 (46.20)	280 (53.80)	1.00	1.00
Urban	216(54.00)	184 (46.00)	1.37 (1.054,1.779)	1.243 (0.849,1.821)
Home gardening				
No	418 (50.70)	407 (49.30)	1.00	1.00
Yes	38 (40.00)	57 (60.00)	0.050(1.000,2.374)	1.412 (0.878,2.273)

Table 5: continued

Characteristics	Minimum meal frequency			
	Inadequate	Adequate	COR (95% CI)	AOR (95% CI)
Place of birth				
Home	240 (46.20)	280 (53.80)	1.00	1.00
Institution	216 (54.00)	184 (46.00)	1.277 (0.946,1.723)	1.045 (0.689,1.583)
Time of post natal care visit				
Missing	158 (53.60)	137 (46.40)	1.00	1.00
Within 1-2 days	22 (27.20)	59 (72.80)	3.093(1.802, 5.310)	**2.295(1.269, 4.150)**
Within 3-6 days	78 (48.40)	83 (51.60)	1.227 (0.835,1.803)	0.860 (0.553,1.337)
After 7 days	198 (51.70)	185 (48.30)	1.078 (0.795,1.461)	0.848 (0.598,1.189)

NB: - AOR: Adjusted Odd Ratio; COR: Crude Odd Ratio; CI: Confidence Interval;
Bolded AOR values: indicate significant association.

5. Discussion

The study found that only 12.6% of children received the recommended minimum dietary diversity, which is low compared with DHS reports of developing countries from Africa, Asia, and Latin America [10]. This low dietary diversity coverage is almost similar to result obtained from revision of 2011 EDHS which was (10.8%)[9]. The dietary diversity in this study is also similar to reports from Democratic Republic of Congo (12%), Burkina Faso (14%), Mali(16%) and study done in India (15.2%)[10, 11] . But much lower than that of Nepal (34%), east New Delhi (33%), Bangladesh (41.9%), Kathmandu (72%) and Sri Lanka (71%)[12, 13, 15-17].

To understand the low level of minimum dietary diversity practice provided to these study participants, it is necessary to look at the food items provided to them. Majority of food items given to these children were from grains, roots or tubers (80 %), legume and nut (60%) and dairy product (50%) but the rest four food groups were below 15 % especially flesh foods were only 2.4 %. so the difference could be due to Lack of awareness and habit about nutritional requirements for infants and young children; and even if has knowledge lack of affordability to a food production, purchasing power due to recently increment of price of consumption goods in Ethiopia contribute to inadequate dietary diversity practice. The variation could also be due to sample size difference since this study consider only one area having similar culture, habit but most of other studies used DHS data of their country for secondary data analysis, which include different population by culture, custom, religion, ethnicity and geographical area. This population has different feeding habit, so proportion of children gets recommended diet diversity also differ.

Proportion of children who received minimum meal frequency found 50.4 %, which is increased by 6 % as compared 2011 EDHS report (44.7%)[9]. Although half of children not meet the required meal frequency, it shows that good practice compared with reports in Mali (25%),Burkina Faso (31%),Democratic Republic of Congo(30%),Cameron (41%) and India (42%)[10, 11]. It is similar studies conducted in new Delhi(49%),Vietnam (48%),Namibia(49%)[10, 17]. But it is very low compared with Asia and Latin American countries like Nepal (82%), Kathmandu (65%), Bangladesh (81%), Sri Lanka (88%), and Peru (78%)[10, 12, 13, 15, 16].

As we see the meal frequency practice it is higher compared with same African countries this might be due to difference in feeding habit and had a better production and purchasing power compared with others relatively. But much lower than Asian countries, this difference might be due to educational level, habit of feeding frequency, Lack of knowledge about how many time solid, semisolid and soft food should give for a child and even if had knowledge lack of affordability to enough food production and purchasing power. The variation could also be due to sample size difference since this study consider only one area having similar culture, habit but most of other studies used DHS data of their country for secondary data analysis, which include different population by culture, custom, religion, ethnicity and geographical area.

The study found that children born from mothers who were well educated and had a secondary level education [AOR 2.516; 95% CI (1.284, 4.929)] or higher education [AOR 4.230; 95% CI (1.918, 9.332)] were more likely to be fed with diversity foods and hence, indicating an increase in the odds of providing a diversity foods with an increase in education level. A recent study done on comparison of five Asian countries on infant feeding reports that mother's education is a significant determinant of appropriate diversified infant feeding[19]. Sri Lanka had the highest proportion of children meeting the infant feeding guidelines for diversity; and this is linked to the higher education status of mothers and overall literacy[12]. Similar positive impact of education on diversity feeding practices is also reported in a previous studies in Nepal, Bangladesh, Indonesia, India including Ethiopia[9, 19]. This could be Educated mothers are more likely to have information (media exposure), understand the education message, more likely to be engaged in the paid work and may have a higher socioeconomic level which could positively impact on infant feeding practices.

Another most important factor significantly associated with minimum dietary diversity was age of a child. Children aged 12–17 and 18–23 months were more likely [(AOR 2.047; 95% CI (1.172-3.3.575) and (AOR 2.889; 95% CI (1.693, 4.931)] to meet minimum dietary diversity compared to children aged 6–11 months. This study is in line with previous study conducted in Ethiopia, Indonesia, Nepal, and Sri Lanka[9, 12,

15, 19], indicate the relationship between different food groups by age group which implies that food groups decrease as the child age decreases.

This might be due to late introduction of complimentary feeding and even if they start complimentary feeding on time; they introduce only milk or cereal products like gruel. Other possibility could be also mothers perceive that being young the intestine of the baby cannot digest solid, semisolid and soft foods and it may develop infections especially intake of meat[21].

It was found that birth order of index child had significant association with dietary diversity. Children born in the second to fourth order [AOR 2.077; 95% CI (1.235, 3.494)] and above fourth order [AOR 2.758; 95% CI (1.258, 6.046)] were more likely to be met the minimum dietary diversity compared with children who were born in first order. This result is contradictory to that of previous studies conducted on 2011 EDHS analysis[9]. This difference might be due to study area, sample size and time horizon. This study is conducted in similar community with limited sample size; but EDHS data used large sample size with participants from different culture, believe and traditions like prioritizing first child from second and so on. Another possible reason for this difference may also as a mothers parity increase she become experienced how to prepare and feed diversified diet to her child.

This study also indicated that children born from mothers who lived in urban region were reported higher practice of minimum dietary diversity [AOR 2.094; 95% CI (1.117, 3.926)] as compared to those children born from mothers who lived in rural region. this is similar to study conducted in Indonesia[20], mothers who live in urban area feed diversified food for their children better than those of mothers reside in rural area. The low practice of diet diversity in rural region may be due to Lakes Awareness regarding importance of dietary diversity in rural community compared to urban community, which has access to mass media. Another difference may be Traditional beliefs and practices. For example, in the rural communities, meat is considered dangerous to the health of the children because it is regarded as not digestible and source of tapeworm infections. Most of the rural area eggs are not given to young children every day and In families that own hens, eggs are often sold in the market and buy other commodities for household consumption[21]. During

introducing complimentary food to infants in rural community, infants may develop diarrhea due to poor hygienic condition, but mothers considered that the cause of diarrhea is due to thanking of foods. So after wards she did not give diversified diet for her infant.

This study found that children whose parents had a home gardening were two times [AOR 2.031; 95% CI (1.093-3.775)] more likely to meet the minimum dietary diversity as compared to children whose parents did not have a home gardening, which Indicating an increase the odds of providing a diversity of food with presence of home gardening. This study is also similar to study conducted in Sidama zone[22].This is because of availably of vegetables and fruits in their nearby compound.

children whose mothers who were exposed to media, i.e. watched television, listened to radio and read newspapers or magazines every day or at least once a week, reported higher dietary diversity [AOR 2.738; 95% CI (1.517, 4.943)] than those children of mothers who watched television, listened to radio and read newspapers or magazines less than once a week or not at all. This is similar studies Shawn in Ethiopia, India and Sri Lanka [9, 11, 12]. This may be reflecting broadly the influence of the media on IYCF practices and can be used as an effective means of promoting diversified feeding practices. Similarly currently different organization including ministry of health have radio and television promotions that create awareness on IYCF practices. So those of mothers have media exposure can feed a child according to recommendations.

The study showed that children with age group of 12-17 months [AOR 3.025; 95% CI (2.141,4.274)] and 18-23 months [AOR 5.028; 95% CI (3.524,7.175)] were more likely to gain the recommended minimum number of feeds compared to children age group between 06-11months. This study also supported by studies conducted in Ethiopia, India and Seri Lanka [9, 11, 12], as the age of a child is increase the proportion of children who got the recommended meal frequency also increased. This could be due to infants during 06-11 months they did not introduce semi solid and soft food; simply give only animal or tinned milk with mother's breast milk. So by virtue of its definition milk is not considered during calculating of minimum meal frequency for breast feed infants.

The study found that Children born in the second to fourth order [AOR 1.580; 95% CI (1.133, 2.205)] and above fourth order [AOR 1.778; 95% CI (1.068, 2.958)] were more likely to be met the minimum meal frequency as compared with children who were born first order. The difference could be that mothers who give birth for first time have less knowledge than those of multi parity mothers. And also as mother's parity increased mothers become experienced how to feed children frequently.

Involvement of mothers in household decision making found to be significantly associated with minimum meal frequency, Children from mothers involved in decision making in the house hold [AOR 1.512; 95% CI (1.053-2.170)] were more likely to provide the recommended meal frequency as compared to the children from the mothers not involved in decision making in the household. This study also in line with study conducted in India[11]. The possible explanation for this difference to be, most of the time the responsibility of child feeding is on the shoulders of mother even if the source is from husbands in Ethiopian context [21]. So participation of mothers with their household issues, they can access household resources easily and contribute that mothers can fed the children more frequently.

children born from mothers who were exposed to media, i.e. watched television, listened to radio and read newspapers or magazines every day or at least once a week has more likely to meet minimum meal frequency [AOR 2.620; 95% CI (1.901-3.611)] than those children born from mothers who watched television, listened to radio and read newspapers or magazines less than once a week or not at all. This study is similar with other studies conducted in Ethiopia, Nepal, Seri Lanka and India [9, 11, 12, 14]. The reason behind for this could be currently there is a media promotion using radio and television that promote and show practice of IYCF. This may reflect broadly the power of mass media for improvement meal frequency practice.

Mothers who had attended PNC within 1-2 day after delivery [AOR 2.295; 95% CI (1.269-4.150)] were more likely to provide recommended meal frequency than mothers who had no PNC visit. Nutritional counseling for mothers about frequent feeding during PNC is important continuum and Mothers who have attended PNC visits may be more informed, have greater access to services and may be from a well off family, and thus more likely to be able to afford and provide of foods more frequently to their children.

6. Limitation of the study

- Recall bias
- Since it considers only 24-h (twenty four hour) feed, it may not accurately reflect their past feeding experience.
- It does not take account of the quality and amount of food provided.

7. Conclusion

Infant and young children aged between 06-23 months receiving minimum dietary diversity score is low compared with other countries. Young children aged between 06-23 months receiving minimum meal frequency is low. Children under 24 months were vulnerable, and this inadequacy of dietary diversity and meal frequency is likely to negatively impact their subsequent health, growth and development.

Age of a child, birth order of index child and media exposure of a mother consistently associated both minimum dietary diversity and meal frequency practices. In addition, education level of a mother, residence and home gardening has significant association with minimum dietary diversity while mother's involvement in household decision making and postnatal visit have significant association with minimum meal frequency.

8. Recommendation

To policy makers and programmers

- Programmers should give special attention to mothers with 6–11 months old children in designing education programs that promote the recommended IYCF practices while implementing additional nutritional support programme.
- Programmers should Increase mass media coverage and strength the role of disseminating information on appropriate feeding practices.

To Dangila town administration health office and health extension workers

- Health extension workers and other primary health care workers should be regularly trained and capacitated about IYCF practice.
- Behavioral change communication/information, Education and communication (BCC/IEC) need to be conduct to create awareness about diversified and frequent feeding practice especially in rural community.
- Health extension workers should educate mothers for how diversified foods prepared and how many times should children feed.

To Dangila town Education office

- Should encourage mother's education through adult education programme.

To Dangila town agricultural office

- Should encourage availability of home gardening in all households through agree cultural extension workers.

To Dangila town women, youth and child affair office

- Should create awareness and empowering women in involvement of decision making at household level through women's association.

To Health professionals at health facility

- Should communicate to transfer key diversified and frequent feeding messages to mother and caregivers.
- Counsel mothers who attend ANC and PNC to practice recommended dietary diversity and meal frequency practice especially mothers give birth for first time.

To Researchers

- Future studies should include prospective data collection to address limitations of a 24 h recall and recall bias.

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10. Annexes

Annex I: Information sheet

Title of the research project: Assessment of minimum dietary diversity, meal frequency practices and associated factors among infant and young children aged 6-23 months in Dangila town, Northwest Ethiopia.

Principal investigator: - Melkamu Beyene (BSc)

Advisors: - 1. Dr.Abebaw Gebeyehu (PhD)

2. Mr. Molla Mesele(Bsc.MSc)

Name of the organization: university of Gondar, college of medicine and Health sciences.

Sponsor: university of Gondar

Introduction

My name is Melkamu Beyene and student at university of Gondar for master degree I have been doing research on children between 6 months and 23 months of age as a part of my study course. I am going to give you information and invite you to be part of this research. Before you decide to be part of the research you can talk to anyone you feel comfortable with about the research.

If there is any word that you don't understand while I am giving the information, please stop me and ask me and I will explain to you.

Purpose of the research

This research is to investigate whether children receive minimum dietary diversity and minimum meal frequency appropriately or not according to WHO indicator. Many literatures in various parts of the world including Ethiopia state that children are no get adequate complementary food with appropriate dietary diversity and meal frequency. Various factors influence this practice: also it is life threatening condition. There for this study tries to identify those factors influencing children receiving minimum dietary diversity and meal frequency among children at Dangila town and look for solution to the problem.

Voluntary participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you

receive as any member of this community will continue and nothing will change. If you choose not to participate in this research, you will be offered all the services that are routinely offered. You may change your idea later and stop participating even if you agreed earlier.

Confidentiality

The information that collected for this research will be kept confidential. Information about you that is collected during the research will be put away and no one but the researcher will be able to see it. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and Keep that information very secret that no one else can access, see or know it. It will not be share with anyone.

Benefits

Your participation in this research many not directly you a certain benefit as an individual. It may benefit all mothers and children. If you are found to be practicing the initiation of breast feeding wrong, you may get information for the proper practice from now on.

Risks and side effects

There are no side effects and known risks related with this of research so far. The only discomfort could be from sharing us few minutes (around 30 minutes) for interview

Whom to contact

This research will be reviewed and approved by the ethical Review committee of the University of Gondar. If you wish to find about more or if you wish to ask questions now or later you can use the contact addresses below.

1. **Mr. Melkamu Beyene** Tel: +251910586634
   E-mail: melkieb12 @gmail.com
2. **Dr. Abebaw Gebeyehu (MPH,PhD**) Tel: +251920314519
   E-mail: abebawgebeyehu@yahoo.com
3. **Mr. Molla Mesele (Bsc, MSc)** Tel: =2510920254664
   Email: molmesele@gmail.com

Annex II: Consent Form (Certificate)

A questionnaire prepared by university of Gondar Medical and Health Sciences Institute of Public Health on infant and young child feeding practices.

How are you?

My name is _____ I am here to collect information from you about your child feeding practice.

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive as any member of this community will continue and nothing will change. Information about you that is collected during the research will be put away and no one but the researcher will be able to see it. Your participation in this research may not directly provide you a certain benefit as an individual. It may benefit all mothers and children. There are no side effects and Known risks related with this kind of research so far and it takes around 30 minutes.

Up to now you have been given all information that I feel you should know regarding the research project that you are being asked to participate in. I think you have understood the issues in detail.

Thank you for cooperation and listening!!!

Are you willing to participate?

Yes ☐ No ☐ (stop the interview)

Name of data collector _____ signature _____

Name of Supervisor _____ signature _____

Annex III: English Questionnaire

Questionnaire code number _____ Kebele_____ Date_____

Part 1:- parents related characteristics

S.No	Questions	Responses
101	How old are you?	_____ Years
102	What is your religion?	1. Orthodox 2. Muslim 3. Protest 4. Other _____
103	What is your ethnicity?	1. Amhara 2. Oromo 3. Tigre 4. Other _____
104	What is your marital status?	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated
105	What is your educational status	1. cannot read and write 2. primary education(1-8) 3. high school education(9-12) 4. tertiary education(college, university)
106	What is your husband's educational status?	1. cannot read and write 2. primary education(1-8) 3. high school (9-12) 4. tertiary education(college, university)
107	What is your occupation status?	1. housewife 2. farmer 3. merchant 4. government employee 5. self employee 6. daily laborer 7. other_____
108	What is your husband's occupation status?	1. farmer 2. merchant 3. government employee 4. self employee 5. daily laborer 6. other_____

Part 2:- Household income assessment

S.no	Questions	Responses
201	Main material of the floor of house	1. earth/sand 2. wood planks 3. cement 4. ceramic tiles 5. others_____
202	Main material of roof	1. thatch 2. corrugated iron/metal 3. cement 4. Others _____
203	Does member of this household own:-	
	Bicycle?	1. Yes 2. no
	M motorcycle?	1. Yes 2. no
	Animal-drawn cart?	1. Yes 2. no
	Car or truck?	1. Yes 2. no
204	Does household own any agricultural land	1. Yes 2. no
205	Does this household own any livestock, herds, other farm animals, or poultry?	
	Cows/bulls/oxen?	1. Yes 2. no
	Horses/donkeys/mules?	1. Yes 2. no
	Goats?	1. Yes 2. no
	Sheep?	1. Yes 2. no
	Chickens?	1. Yes 2. no
	Beehives?	1. Yes 2. no
206	Does this household have a bank or microfinance saving account?	1. Yes 2. no
207	Does your household have:	
	Electricity?	1. Yes 2. no
	A watch/clock?	1. Yes 2. no
	A radio?	1. Yes 2. no
	A television?	1. Yes 2. no
	A mobile telephone?	1. Yes 2. no
	A non-mobile telephone?	1. Yes 2. no
	A refrigerator?	1. Yes 2. no
	A table? A chair?	1. Yes 2. no
	A bed with cotton/sponge/spring mattress?	1. Yes 2. no
	An electric mitad?	1. Yes 2. no
	A kerosene lamp/pressure lamp?	1. Yes 2. no

Part 3:- Child related characteristics

Sn. No	Questionnaire	Responses
301	What is the age of your index child?	_____year _____months
302	What is the sex of your index child?	1. Male 2. Female
303	What is the birth order of the index child?	1. first born 2. second to fourth 3. above fourth
304	Is the child currently breast feed?	1. yes 2. no
305	Is there diarrhea in the last two weeks	1. yes 2. no
306	Is there acute respiratory infection(ARI)in the last two weeks	1. yes 2. no

Part 4:- Health service related characteristics assessment

S.No	Questions	Responses
401	For how long did you follow anti-natal care (ANC) during your pregnancy of your index child?	1. none 2. 1_3 3. 4+ 4. don't know
402	Where did you give birth to your index child?	1. home 2. health facility
403	When did you check up after delivery	1. missing 2. 1_2 days 3. 3_6 days 4. sevenths or later 5. don't know

Part 5:-**community and household attribute assessment**

S.No	Questions	Responses
501	Where is your residence?	1. rural 2. urban
502	Do you have home gardening?	1. yes 2. no
503	How you use the products of home gardening?	1. for selling 2. for household consumption 3. both for sell and household consumption

504	How many under five children do you have in the household?	1. one 2. two 3. three and above
505	Do you participate in decision making in the house hold?	1. yes 2. no
506	For how many times watch television?	1. not at all 2. Less than once a week 3. At least once a week 4. Almost every day
507	For how many times listen radio?	1. not at all 2. Less than once a week 3. At least once a week 4. Almost every day
508	For how many times Read newspaper or magazine?	1. not at all 2. Less than once a week 3. At least once a week 4. Almost every day
509	Where did you get information about infant feeding options?	1. from health professionals 2. from friends 3. from relatives 4. from family 5. from media promotion(radio, television) 6. other_____ 7. no information

<u>Part 6:</u> - feeding practice assessment

601	Please tell me everything that your child ate yesterday during the day or night (whether at home or outside the home). Think about when first woke up yesterday. Did eat anything at that time? What did do after that? Did eat anything at that time? If yes, ask: Please tell me everything ate at that time. Probe: 'Anything else?' until respondent says 'nothing else.' If respondent mentions mixed dishes like a sauce or stew, probe: What ingredients were in that mixed dish? Probe: 'Anything else?' Until respondent says 'nothing else.' Repeat questions above until respondent says the child went to sleep until the next day.	If at least one food from the food group has been given in the past 24 hours, circle 'Y' in the column below. If no food in a food group has been given, circle 'N.' If the respondent doesn't know, circle 'DK.'

Questionnaire	1	Injera, bread, rice, noodles, porridge, or other foods made from grains, such as, tef, maize, barley, wheat, sorghum, millet	Y N DK
	2	Pumpkin, carrots, sweet potatoes that are yellow/ orange inside?	Y N DK
	3	potatoes, beetroot or any other foods made from roots	Y N DK
	4	Any foods made from beans, peas, lentils or nuts	Y N DK
	5	Any dark green leafy vegetables? Like spinach/ cabbage leaves?	Y N DK
	6	Ripe mangoes, ripe papayas	Y N DK
	7	Any other fruits or vegetables (Banana, Avocado, Lemon, Apple pineapple…)?	Y N DK
	8	Liver, kidney, heart or other organ meats?	Y N DK
	9	Any meat such as beef, pork, lamb, goat, chicken or duck?	Y N DK
	10	Fresh or dried fish, shellfish, or seafood?	Y N DK
	11	Eggs?	Y N DK
	12	Cheese, yogurt, or other milk products?	Y N DK
	13	Any oil, fats or butter, or foods made with any of these?	Y N DK
	14	Any sugary foods such as chocolates, sweets, candies, pastries, cakes or biscuits?	Y N DK
	15	Condiments for flavor such as chilies, spices, herbs?	Y N DK
	16	Other foods: please write down other foods in this box that the respondent mentioned but are not in the list above.	
		Total score	
602	Now I would like to ask you Number of you feed for your child the last 24 hours.		
	1.	How many times did your child eat solid, semi-solid or soft foods other than liquids yesterday during the day or at night?	……times
	2.	How many times yesterday during the day or night did drink milk products if he drunk a milk?	……times

Annex IV: የመረጃ ቅጽ

የጥናቱ ርእስ ፡- እናቶች ለልጆቻቸዉ ተጨማሪ ምግብ በቀን ስንት ጊዜ እና በምን ያህል ስብጥር እንደሚመግቡ እና ተያያዥነት ያላቸው ጉዳዮች የዳሰሳ ጥናት፡፡

የዋና አጥኝው (የተመራማሪው) ስም ፡- መልካሙ በየነ

የጥናቱ አማካሪዎች ስም ፡-1. ዶ/ር አበባዉ ገበየሁ

2. አቶ ሞላ መሰለ

የተቋሙ ስም ፡- ጎንደር ዩኒቨርሲቲ የህክምናና ጤና ሳይንስ ኮሌጅ ህብረተሰብ ጤና ተቋም

የጥናቱን ወጪ ሚሸፍነው ፡- ጎንደር ነቨርሲቲ

መግቢያ

ስሜ መልካሙ በየነ ይባላል፡፡ በጎንደር ዩኒቨርስቲ የሁለተኛ ድግሪ ተመራቂ ተማሪ ስሆን በአሁኑ ሰዓት ዕድሜያቸዉ ከ6 አስከ 23 ወር የሆኑ ህፃናት እና እናቶቻቸው የሚያሳትፉት መመረቂያ ጥናታዎ ፁሁፍ በመስራት ላይ እገኛለሁ፡፡ እርስዎም በዚህ ጥናት ውስጥ ከሚሳተፉ እናቶች መካከል አንዷ እንዲሆኑ መልካም ፈቃድዎን እጠይቅዎታለሁ፡፡ ውሳኔውን ከመወሰንዎ በፊት አስፈላጊ ሆኖ ካገኙት ከሚፈልጉት ሰው ጋር መመካከር ይችላሉ፡፡

ስለጥናቱ ከዚህ ቀጥሎ በማስረዳትዎት ወቅት ምንም አይት ያልገባዎት ጉዳይ ካለ በማንኛውም ሰዓት አስቁመው ማብራሪያ መጠየቅ ይችላሉ፡፡

የጥናቱ ዓላማ

ይህ ጥናት በዋነኝነት ዓላመውን ያደረገው ተጨማሪ ምግብ ከሚወስዱ ልጆች ውስጥ ምን ያህሎች በቀን ስንት ጊዜ፣በምን ያህል ስብጥር እንደሚመግቡ እና ትክክለኛ የሚባለውን የአመጋገብ ልምድ በትክክል ማሟላት አለማሟላታቸውን ለማወቅ ነው፡፡ የተለያዩ ጥናታዊ ጹሁፎች እንደሚጠቁሙት በተለያዩ አላማችን ክፍሎች ኢትዮጵያንም ጨምሮ ልጆች በቀን ዉስጥ የሚመገቡት የምግብ መጠን (ስብጥር) እና ቁጥር በተለያዩ ምክንያቶች የተነሳ በቂ አለመሆኑን ያሳያሉ ይህም ሁኔታ በህጻናት ላይ የምግብ እጥረት ችግር እና የሞት አደጋንም ሊያስከትል ይችላል፡፡ ስለዚህ ይህ ጥናት እናቶች ትክክለኛ የሆነውን በቀን ስንት ጊዜ፣በምን ያህል መጠን (ስብጥር) የሚለውን ልምድ አውቀዉ ለልጆቻቸው እንዲመግቡ ወይም ልጆች እንዳይመገቡ የሚያደርጓቸውን ምክንያቶች እና ተያያዥነት ያላቸውን ጉዳዮች በመለየት መፍትሔ የሚላቸውን ስልቶች ለመጠቀም ያግዛል፡፡

በፈቃደኝነት ላይ የተመሰረተ ተሳታፊነት

በጥናቱ የመሳተፍ ወይም ያለመሳተፍ (እራስን ከጥናቱ የማግለል) መብትዎ የግል ምርጫዎ ብቻ ይሆናል፡፡ በዚህ ጥናት ተሳተፉም አልተሳተፉም እንደማንኛውም

የማህብረሰብ አባል ከዚህ በፊት ያገኟቸው የነበሩ አገልግሎቶችም ሆነ ጥቅሞች የማይለወጡ መሆኑን እንዲገነዘቡልን እንወዳለን፡፡ በጥናቱ ላይ ለመሳተፍ ከወሰኑ በኋላ ወይም መሳተፍ ከጀመሩ በኋላም እንኳ ቢሆን በማንኛውም ወቅት እራስዎን ከጥናቱ ተሳትፎ ለማግለል ቢወስኑ ይህንኑ በነፃነት ማድረግ ይችላሉ፡፡

ሚስጥር ጠባቂነት

ለዚህ ጥናት ተብሎ ከእርስዎ የተገኙ ማንኛውም መረጃ ሚስትራዊነቱ በተጠበቀ ሁኔታ የሚያዝ ይሆናል፡፡ በመሆኑም ከዋና አጢኒው በስተቀር ማንኛውም ግለሰብ መረጃውን እንዲያገኝ እንዲመለከት አይፈቀድለትም ፡፡ ለዚህም ሲባል የሚወሰዱ መረጃዎች ላይ ስምዎ እንዳይኖር ይደረጋል በምትኩ መለያ ቁጥር (ኮድ) ብቻ እንዲኖረው በማድረግ ይህንን ቁጥርን የሚያውቀው ዋና አጥኝው ብቻ ይሆናል፡፡

የተሳታፊዎች ተጠቃሚነት

በዚህ ጥናት በመሳተፍዎ ምክንያት ለእርስዎ በግልዎ የሚደረግልዎ ወይም የሚሰጥዎ ጥቅማጥቅም አይኖርም ፡፡ የጥናቱ ውጤት በተግባር ላይ ሲውል ግን ሁሉንም ህፃናት ሊጠቅም የሚችል ስራ ሊሰራ ይችላል፡፡ ነገር ግን በዚህ የዳሰሳ መጠይቃችን ጊዜ ልጆች ማግኘት ያለባቸውን የምግብ ስብጥር እና የአመጋገብ ቁጥር በትክክለኛው መንገድ እየተገበሩ የቆዩ ካልሆኑ ትክክለኛውን አተገባበር በተመለከተ መረጃ እንሰጥወታለን፡፡

በጥናቱ ሂደት ሊያጋጥሙ የሚችሉ ለአደጋ ተጋላጭነት ወይም የጎንዮሽ ጉዳቶች

በዚህ ጥናት ምክንያት ሊያደርስብዎ የሚችል ምንም አይነት ለአደጋ ተጋላጭነት ወይም የጎንዮሽ ጉዳቶች አይኖርም ፡፡ ብቸኛው መስዋትነት የሚሆነው መጠይቁን ጨርሰን እስክንሞላ ድረስ አብረውን የሚቆዩዋቸው 30 ያህል ደቂቃዎች ብቻ ናቸው፡፡

ሊያገኟቸው የሚችሉ ግለሰቦች

ይህ ጥናት በጎንደር ዩንቨርስቲ የጥናታዊ ፁሁፎች ስነ-ምግባር ገምጋሚ ኮሚቴ ተገምግሞ እና ተጣርቶ ብቁነት ተረጋግጦ የሚፈቀድ ይሆናል፡፡ ስለጥቱም ሆነ ተያዥነት ስላላቸው ጉዳዮች ተጨማሪ መረጃ ከፈለጉ የሚከተሉትን ግለሰቦች በአድራሻዎቻቸው ማግኘትና መወያየት ይችላሉ፡፡

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Annex V: የፈቃደኝነት መጠየቂያ ቅጽ

በጎንደር ዩንቨርሲቲ፣ ህክምና እና ጤና ሳየንስ ኮሌጅ፣ህብረተሰብ ጤና አጠባበቅ ተቋም በህፃናት አመጋገብ ዙሪያ የተዘጋጀ መጠይቅ

መግቢያ :- ሰላም እንደምን አሉ?

ስሜ ..... ይባላል፡፡ ወደ እርስዎ የመጣሁት የህፃናትን የአመጋገብ ልምድና ተያያዥነት ያላቸው ጉዳዮች ላይ መረጃ ለመሰብሰብ ነው፡፡ በጥናቱ የመሳተፍ ወይም ያለመሳተፍ (እራስን ከጥናቱ የማግለል) መብትዎ የግል ምርጫዎ ብቻ ይሆናል፡፡

በዚህ ጥናት ተሳተፉም አልተሳተፉም እንደማንኛውም የማ/ሰብ አባል ከዚህ በፊት ያገኟቸው የነበሩ አገልግሎቶችንም ሆነ ጥቅሞች የማይለወጡ መሆኑን እንዲገነዘቡልን እንወዳለን፡፡ ለዚህ ጥናት ተብሎ ከእርስዎ የተገኘ ማንኛውም መረጃ ሚስጥራዊነቱ በተጠበቀ ሁኔታ የሚያዝ ይሆናል፡፡ በመሆኑም ከዋና አጥኝው በስተቀር ማንኛውም ግለሰብ መረጃውን እንዲያገኝ ወይም እንዲመለከት አይፈቀድለትም በዚህ ጥናት በመሳተፍዎ ምክንያት ለእርስዎ በግልዎ የሚደረግልዎ ወይም የሚሰጥዎ ጥቅማጥቅም አይኖርም፡፡ የጥናቱ ውጤት በተግባር ላይ ሲውል ግን ሁሉንም ህፃናት ሊጠቅም የሚችል ስራ ሊሰራ ይችላል፡፡ በዚህ ጥናት ምክንያት ሊደርስብዎ የሚችል ምንም አይነት ለአደጋ ተጋላጭነት ወይም የጎንዮሽ ጉዳቶች አይኖሩም፡፡

እስካሁን በነበረን ቆይታ ይሳተፉበት ዘንድ ስለተጠየቁ ፕሮጀክት ወይም ጥናት አስፈላጊ የተባሉትን መረጃዎች በሙሉ ገልፀንለዎታል፡፡ በቂ መረጃም እንዳገኙ እና እንደተረዱት እናምናለን፡፡ ሚስትራዊነቱም የተጠበቀ ሲሆን የሚወስደው ጊዜ ከ 30 ደቂቃዎች በላይ አይፈጅም፡፡

ስላዳመጡን አመሰግናለሁ!

በዚህ ጥናት ለመሳተፍ ፈቃደኛነዎት ?

አዎ ☐ ፈቃደኛ አይደለሁም☐ (መጠይቁን ያቋርጡ)

የመረጃ ሰብሳቢው ስም _____ ፊርማ _____

የተቆጣጣሪው (የሱፐርቫይዘሩ) ስም _____ ፊርማ _____

Annex VI፡ የአማርኛ መጠይቅ

የመጠይቅ ቁጥር _____ **ቀበሌ** _____ **ቀን**_____

<u>ክፍል አንድ</u> ፡- የእናት/አሳዳጊ ሁኔታ ዳሰሳ

ተ.ቁ	ጥያቄዎች	መልሶች (አማራጮች)
101	ዕድሜዎት ስንት ነዉ?	_____ዓመት
102	ሃይማኖትዎ ምንድን ነው?	1. ኦርቶዶክስ 2. መስሊም 3. ፕሮቴስታንት 4. ሌላ _____
103	የየትኛው ብሄረ አባል ነዎት?	1. አማራ 2. ኦሮሞ 3. ትግሬ 4. ሌላ _____
104	የትዳርዎ ሁኔታ ምንድን ነው?	1. ያገባች 2. ያላገባች 3. የተፋታች 4. የሞተባት 5. ተለይታ የምትኖር
105	የትምህርት ደረጃዎ/ክፍልዎ ስንት ነው?	1. ማንበብ እና መፃፍ የማትችል 2. የመጀመሪያ ደረጃ ትምህር ያላት (ከ1-8) 3. የ2ኛ ደረጃ ት/ትያላት (9-12) 4.ከፍተኛ ት/ት ደረጃ ያላት(ኮሌጅ፣ዩኒቨርሲቲ)
106	የባለቤትዎ የትምህርት ደረጃ/ክፍል ስንት ነው?	1. ማንበብ እና መፃፍ የማይችል 2. የመጀመሪያደረጃ ትምህር ያለው (ከ1-8) 3. የ2ኛ ደረጃ ት/ትያለው (9-12) 4.ከፍተኛ ት/ት ደረጃ ያለው(ኮሌጅ፣ዩኒቨርሲቲ)
107	የተሰማሩበት የስራ መስክ/ዋና ስራዎ ምንድን?	1. የቤት እመቤት 2. የግብርና ሙያ 3. ንግድ 4. የመንግስት ተቀጣሪ / ደመወዝተኛ 5. የግል ድርጅት ተቀጣሪ 6. የግል ስራ የምትሰራ 7. የጉልበት ሰራተኛ 8. ሌላ _____
108	የባለቤትዎ የስራ መስክ/ዋና ስራዉ ምንድን ነው ?	1. የግብርና ሙያ 2. ንግድ 3. የመንግስት ተቀጣሪ / ደመወዝተኛ 4. የግል ድርጅት ተቀታሪ 5. የግል ስራ የሚሰራ 6. የጉልበት ሰራተኛ 7. ሌላ _____

ክፍል ሁለት፡-የቤተሰብ ሀብት ዳሰሳ

ተ.ቁ	ጥያቄዎች	መልሶች (አማራጮች)
201	የቤቱ ወለል በአብዛኛው የተሰራበት ቁስ ከምንድን ነዉ?(ይመልከቱ)	1. መሬት/ አሸዋ 2. እንጨት 3. ሲሚንቶ 4. ሸክላ/ሴራሚክ 5.ሌላ _____
202	የቤቱ ጣራ የተሰራብት ቁስ ምንድን ነዉ?(ይመልከቱ)	1. ከሳር 2.ከቆርቆሮ 3. ሲሚንቶ/በኮርኒስ እቃዎች 4.ሌላ_____
203	የሚከተሉት የመጓጓዣ አይነቶች በቤት ዉስት ይገኛሉ?	
	ብስክሌት	1. አዎ 2. አይገኝም
	ሞተር ብስክሌት	1. አዎ 2. አይገኝም
	ጋሪ	1. አዎ 2. አይገኝም
	መኪና	1. አዎ 2. አይገኝም
204	የእርሻ መሬት አለዎት?	1. አዎ 2. የለኝም
205	በቤት ዉስት የሚከተሉት እንስሳት አለዎት?	
	በሬ፣ላም፣ወይፈን፣ጊደር	1. አዎ 2. አይገኝም
	አህያ፣በቅሎ፣ፈረስ	1. አዎ 2. አይገኝም
	ፍየል	1. አዎ 2. አይገኝም
	በግ	1. አዎ 2. አይገኝም
	ዶሮ	1. አዎ 2. አይገኝም
	የንብ ቀፎ	1. አዎ 2. አይገኝም
206	የርስዎም ሆነ የባለቤትዎ የባንክ የቁጠባ ደብተር አለዎት?	1. አለ 2. የለም
207	የሚከተሉት ቁሶች በቤትዎ ይገኛሉ?	
	ኤሌክትሪክ አገልግሎት	1. አዎ 2. አይገኝም
	የግድግዳ ሰዓት	1. አዎ 2. አይገኝም
	ራዲዮ	1. አዎ 2. አይገኝም
	ቴሌቪዥን	1. አዎ 2. አይገኝም
	ሞባል ስልክ	1. አዎ 2. አይገኝም
	የቤት ስልክ	1. አዎ 2. አይገኝም
	ፍሪጅ	1. አዎ 2. አይገኝም
	ጠረጴዛ፣ወንበር	1. አዎ 2. አይገኝም
	መዝሙልድ አልጋ	1. አዎ 2. አይገኝም
	የኤሌክትርክ ምጣድ	1. አዎ 2. አይገኝም
	ፋኖስ	1. አዎ 2. አይገኝም

ክፍል ሶስት፡- የልጅ ሁኔታ ዳሰሳ

ተ.ቁ	ጥያቄዎች	መልሶች (አማራጮች)
301	የህፃኑ/ኗ እድሜ ስንት ነው ?	_____ዓመት_____ወር
302	የህፃኑ/ኗ ፆታ ምንድን ነው ?	1. ወንድ 2. ሴት
303	ህፃኑ/ኗ ስንተኛ ልጅዎ ነዉ/ናት?	1. የመጀመሪያ 2. ከ ሁለትኛ እስከ አራተኛ 3. ከ አራተኛ በላይ
304	በአሁኑ ሰዓት ህፃኑ/ኗ ጡት እየጠባ/ች ነዉ?	1. አዎ 2. አይጠባም/አትጠባም
305	ለአለፉት ሁለት ሳምንታንት ህፃኑ/ኗ ተቅማጥ ታሞ/ማ ነበር?	1. አዎ 2. አለታመመም/ችም
306	ለአለፉት ሁለት ሳምንታንት ህፃኑ/ኗ የመተንፈሻ አካል በሽታ(እንደ የሳንባ ምች፣ጉንፋን) ታሞ/ማ ነበር?	1. አዎ 2. አለታመመም/ችም

ክፍል አራት ፡- የሰነ ተዋልዶና የጤና አገልግሎት ዳሰሳ

ተ.ቁ	ጥያቄዎች	መልሶች (አማራጮች)
401	የአሁኑ/ኗን ህጻን ባረገዙ ወቅት ለምን ያህል ጊዜ የቅድመ ወሊድ ክትትል አደረጉ?	1. አላደረኩም 2. ከ1-3 ጊዜ 3. ከ አራት ጊዜ በላይ 4. አላስታዉስም
402	የአሁኑ/ኗን ህፃን የወለዱት የት ነው?	1. ከቤት 2. ከጤና ተቋም
403	ከ ወለዱ በኋላ መቸ ነበር ድህረ ወሊድ ክትትል የጀመሩት?	1. ክትትል አላደርረኩም 2. ከ 1-2 ባሉት ቀናት 3. ከ 3-6 ባሉት ቀናት 4. ከ 7 ቀን በኋላ 5.አላስታውስም

ክፍል አምስት ፡- የማህበራዊ እና የቤተሰብ ሁኔታ ዳሰሳ

ተ.ቁ	ጥያቄዎች	መልሶች (አማራጮች)
501	የ መኖሪያ አካባቢዎ የት ነዉ?	1. ከተማ 2. ገጠር
502	የጓሮ አትክልት አለዎት?	1. አለኝ 2. የለኝም
503	ለጥያቄ 502 መልስዎ አለኝ ከሆነ ለምንድን ነው የሚጠቀሙበት?	1. ሙሉ በሙሉ ለገበያ ሽያጭ 2.ሙሉ በሙሉ ለቤት ውስት ፍጆታ 3.ከፊሉን ለሽያጭ ከፊሉን ለቤት ውስት ፍጆታ
504	በቤትዎ ውስጥ አድሜያቸዉ ከአምስት	1. አንድ

	አመት በታች የሆኑ ህጻናት ስንት ናቸዉ?	2. ሁለት 3. ሶስት እና በላይ
505	የቤተሰብን ጉዳይ በተመለከተ በሚወሰኑ ዉሳኔዎች እርስዎ ይሳተፋሉ?	1. አዎ 2. አልሳተፍም
506	ለምን ያህል ጊዜ ቴሌቪዥን ይመለከታሉ?	1. አልመለከትም 2. በሳምንት ከ አንድ ጊዜ በታች 3. ቢያንስ በሳምንት አንድ ጊዜ 4. በየቀኑ
507	ለምን ያህል ጊዜ ራዲዮ ያዳምጣሉ?	1. አላዳምትም 2. በሳምንት ከ አንድ ጊዜ በታች 3. ቢያንስ በሳምንት አንድ ጊዜ 4. በየቀኑ
508	ለምን ያህል ጊዜ ጋዜጣ ወይም መጽሔት ያነባሉ?	1. አላነብም 2. በሳምንት ከ አንድ ጊዜ በታች 3. ቢያንስ በሳምንት አንድ ጊዜ 4. በየቀኑ
509	ስለ ህፃናት አመጋገብ በተመለከተ መረጃ የት የት ያገኛሉ?	1. ከጤና ባለሙያ 2. ከጓደኛ 3. ከዘመድ 4. ከቤተሰብ 5.ከማስታወቂያ(ራዲዮ፣ቴሌቪዥን) 6. ሌላ —————— 6. አላገኝም

<u>ክፍል ስድስት</u>:- የምግብ <u>አመጋገብ ልምድዳሰሳ</u>

601	ትናንትና ከእንቅልፉ/ፏ/ ከተነሳ/ች/በት ጊዜ ጀምሮ እስከተኛ/ች/በት ድረስ በቀንም ይሁን በሌሊት ከቤትም ይሁን ከቤትዉጭ ምን መገቡት/ቢት? እባክዎት ሁሉንም በማስታወስ ምንም ሳይቀር ይንገሩኝ። (የሚዘረዘሩትን ምግቦች በሙሉ፤ እንዲሁም ያን ምግብ ለማዘጋጀት ለግብአትነት ጥቅም ላይ የዋሉትን በሙሉ ይዘርዝሯቸዉ። ለምሳሌ እንጀራ፣ ወጥ የመሳሰሉት። በተጨማሪም ምን አይነት ስጋ፣ ምን አይነት ወተት፣ ምን አይነት ጥራጥሬ ወዘተ በዝርዝር ይገለጽ።) መልስ ሰጭዋ ምግቡን ሲጠሩ ከምግብ ዝርዝሩ ስሩ ላይ ያስመሩበት!(ከምግብ ዝርዝሩ ውስት አዎ የሚል ክሌለ በእያንዳንዱ ምግብ ክፍል ውስጥ ያሉትን ዝርዝሮች በእርጋታ እያነበባችሁ መልስ እንዲሰጡ አድርጉ።)		
		ጥያቄ	በትናንትናዉ ዕለትበምግብ ክፍሉ ውስጥ ከተዘረዘሩት አንዱን መግበዉ ከሆነ በፊት ለፊቱ ባለው አማራጮች ላይ ምልክት አድርጉ)።
	1	እንጀራ፤ዳቦ/ቂጣ፣ገንፎ፣ሩዝ፤ፓስታ ወይም ከአዝርዕት የተዘጋጁ ምግቦች ከጤፍ፣ በቆሎ ፣ ገብስ ፣ ሰንዴ ዳጉሳ፣ ማሽላ?	1.አዎ 2. አልዎሰደም 3.አላዉቅም

	2	ዱባ፣ካሮት፣ስኳርድንች(በዉስጣቸዉ ብርቱካናማ ቀለም ይዘት ያላቸዉ ምግቦች)?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	3	ድንች፣ቀይስር?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	4	ከጥራጥሬ(ባቄላ፣አተር፣ምስር፣ጓያ፣አቮሎኒ፣ኑግ ፣ሰሊጥ፣ሱፍ፣ነፍሰ አድን ምግብ) የተዘጋጁ ምግቦች?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	5	ማናቸዉም ደማቅ አረንጓዴ ቅጠል ያላቸዉ አትክልቶች አንደ አበሻቆመን፣ሰላታ፣ ቆስጣ?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	6	የበሰለ ማንጎ፣ፓፓየ?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	7	ሌሎች ከላይ ያለተጠቀሱ ፍራፍሬና አትክልቶች(ሙዝ፣አቮካዶ፣አናናስ፣አፕል፣ጥቅል ጎመን ቲማቲም)?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	8	ጉበት፣ኩላሊት፣ልብ ወይም ልሎች የሆድ ዕቃ ጨምሮ የአካል ክፍል ስጋዎች?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	9	ማናቸዉምየስጋአይነት የበሬ፣የበግ፣የፍየል፣የዶሮ)ቋንጣ፣የቋንጣ ዱቄት?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	10	አሳ እና ሌሎች የባህር ምግቦች?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	11	እንቁላል?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	12	ወተት፣አይብ፣ እርጎ ልሎች የወተት ተዋፆዎች?	1.አዎ 2. አልወሰደም 3.አላዉቅም
	13	ማናቸውም ዘይት ፣ቅቤ፣ስብ	1.አዎ 2. አልወሰደም 3.አላዉቅም
	14	ማናቸውም ጣፋጭ ምግቦች እንደ ብስኩት፣ ኬክ፣ ቸኮሌት፣ ከረሚላ ፣ለስላሳ መጠጦች	1.አዎ 2. አልወሰደም 3.አላዉቅም
	15	ቅመማ ቅመሞች እንደ ቃሪያ፣እርድ፣ጨው	1.አዎ 2. አልወሰደም 3.አላዉቅም
	16	መልስ ሰጭዋ የዘረዘሩት ነገር ግን ዝርዝር ዉስጥ ከሌለ ከዚህ ላይ ይፃፉ!	
		ጠቅላላ የምግብ ስብጥር	
602		ከዚህ በመቀጠል በቀን ስንት ጊዜ ምግብ ለልጅዎ እንደሰጡት/ጧት ልጠይቅዎት ነው? (ትናንትና ከእንቅልፉ/ፏ/ ከተነሳ/ች/በት ጊዜ ጀምሮ እስከተኛ/ች/በት ድረስ በቀንም ይሁን በሌሊት ከቤትም ይሁን ከቤትዉጭ)	
	1.	ወተትን ሳይጨምር ሌሎች የምግብ አይነቶችን ስንት ጊዜ መግቡ/ቢ/ት?	_____ ጊዜ
	2.	ሌሎች የምግብ አይነቶችን ሳይጨምር በቀን ስንት ጊዜ ወተት አጠጡት/ጪ/ት?	_____ ጊዜ

አመሰግናለሁ!!!

Annex VII: Declaration

I, the under signed, senior MSC student declare that this thesis is my original work in partial fulfillment of the requirement for the masters degree in Applied Human Nutrition.

Name _____

Signature _____

Place of submission: Institute of Public Health, College of Medicine and Health Sciences, University of Gondar.

Date of submission _____

This thesis work has been submitted for examination with our approval as University Advisors.

Advisors

	Name	Signature
1.	_____	_____
2.	_____	_____